

We claim:

## CLAIMS

- 1    1.    A battery latch comprising:
  - 2       a body portion;
  - 3       at least one resilient spring member integral to and extending from the body portion;
  - 5       at least one protruding member integral to and extending from the body portion,
  - 6       the at least one resilient spring member biasing the at least one protruding member to an extended position.
- 1    2.    The battery latch of claim 1 wherein the at least one protruding member extends at least partially into a battery compartment of a housing when the battery latch is installed in the housing when the at least one protruding member is in the extended position.
- 1    3.    The battery latch of claim 1 wherein the at least one protruding member extends at least partially into at least one recess in a battery compartment of a housing when the battery latch is installed in a battery pack when the at least one protruding member is in the extended position and when the battery pack is installed in the battery compartment of the housing.
- 1    4.    The battery latch of claim 1 further comprising a slide button removably coupled to the body portion that allows the body portion to slide against a biasing force of the at least one resilient spring member.

1       5.     The battery latch of claim 1 wherein the slide button comprises at least one  
2     retaining portion that may be coupled to the battery latch by sliding the at least one  
3     retaining portion into an opening in the battery latch until the at least one retaining  
4     portion clicks to couple the slide button to the body portion.

1       6.     A housing for a portable electronic device comprising:  
2              first and second rails in the interior of the housing;  
3              an end stop in the interior of the housing;  
4              a battery compartment defined by a recess in the housing;  
5              a battery latch dimensioned to slide between the first and second rails, the battery  
6              latch including at least one resilient spring member integral to the battery latch, the at  
7              least one resilient spring member being placed against the end stop to provide a spring  
8              bias that causes the battery latch to slide to an extended position, the battery latch  
9              including at least one protruding member that extends at least partially into the battery  
10             compartment when the battery latch is in the extended position; and  
11                  a slide button coupled to the battery latch and accessible on the outside of the  
12             housing, the slide button allowing a user to slide the slide button and thereby move the  
13             battery latch to a retracted position that removes the at least one protruding member from  
14             the battery compartment.

1       7.     The housing of claim 6 wherein the at least one protruding member includes a  
2              geometric surface that allows a battery pack to be installed into the battery compartment  
3              by pressing the battery pack into the battery compartment, the force of pressing the  
4              battery pack overcoming the biasing force of the at least one resilient spring member to  
5              move the at least one protruding member to the retracted position.

1       8.     The housing of claim 7 wherein the geometric surface comprises a beveled  
2              surface.

1       9.     The housing of claim 7 wherein the geometric surface comprises a curved surface.

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1       10.     The housing of claim 6 wherein the battery latch returns to the extended position  
2     with the at least one protruding members in at least one corresponding recess in the  
3     battery pack when the battery pack is fully seated in the battery compartment.

1       11.     A battery pack comprising:  
2              first and second rails in the interior of the battery pack;  
3              an end stop in the interior of the battery pack;  
4              a battery latch dimensioned to slide between the first and second rails, the battery  
5     latch including at least one resilient spring member integral to the battery latch, the at  
6     least one resilient spring member being placed against the end stop to provide a spring  
7     bias that causes the battery latch to slide to an extended position, the battery latch  
8     including at least one protruding member that extends at least partially out of the battery  
9     pack when the battery latch is in the extended position; and  
10             a slide button coupled to the battery latch and accessible on the outside of the  
11   battery pack, the slide button allowing a user to slide the slide button and thereby move  
12   the battery latch to a retracted position that retracts the at least one protruding member  
13   into the battery pack.

1       12.     The battery pack of claim 11 wherein the at least one protruding member includes  
2     a geometric surface that allows the battery pack to be installed into a battery compartment  
3     of a housing by pressing the battery pack into the battery compartment, the force of  
4     pressing the battery pack overcoming the biasing force of the at least one resilient spring  
5     member to move the at least one protruding member to the retracted position.

1       13.     The battery pack of claim 12 wherein the geometric surface comprises a beveled  
2     surface.

1       14.     The battery pack of claim 12 wherein the geometric surface comprises a curved  
2     surface.

1       15.     The battery pack of claim 11 wherein the battery latch returns to the extended  
2     position with the at least one protruding members in at least one corresponding recess in a  
3     housing when the battery pack is fully seated in a battery compartment within the  
4     housing.

1       16. A combination of a housing and a battery pack,  
2           (A) the housing comprising:  
3               (A1) first and second rails in the interior of the housing;  
4               (A2) an end stop in the interior of the housing;  
5               (A3) a battery compartment defined by a recess in the housing;  
6               (A4) a battery latch dimensioned to slide between the first and second  
7                rails, the battery latch including at least one resilient spring member integral to the  
8                battery latch, the at least one resilient spring member being placed against the end  
9                stop to provide a spring bias that causes the battery latch to slide to an extended  
10              position, the battery latch including at least one protruding member that extends at  
11              least partially into the battery compartment when the battery latch is in the  
12              extended position;  
13               (A5) a slide button coupled to the battery latch and accessible on the  
14              outside of the housing, the slide button allowing a user to slide the slide button  
15              and thereby move the battery latch to a retracted position that removes the at least  
16              one protruding member from the battery compartment;  
17               (A6) at least one battery pack retainer recess;  
18           (B) the battery pack comprising:  
19               (B1) an enclosure having at least a portion dimensioned to fit within the  
20              battery compartment;  
21               (B2) the portion of the enclosure including at least one extending portion  
22              that is configured to go in the at least one battery pack retainer recess of the  
23              housing when the battery pack is installed in the housing; and  
24               (B3) the portion of the enclosure including at least one recess that aligns  
25              with and receives the at least one protruding member when the battery pack is  
26              installed in the housing.

1       17. A method for removably coupling a battery pack to a housing of a portable  
2 electronic device, the method comprising the steps of:  
3             (A) providing a battery latch within the housing, the battery latch comprising:  
4                 (A1) a body portion;  
5                 (A2) at least one resilient spring member integral to and extending from  
6 the body portion;  
7                 (A3) at least one protruding member that extends at least partially into a  
8 battery compartment defined in the housing, the at least one resilient spring  
9 member biasing the at least one protruding member into the battery compartment;  
10           (B) installing a battery pack into the battery compartment, the battery pack  
11 comprising at least one recess that receives the at least one protruding member when the  
12 battery pack is installed in the battery compartment of the housing, the battery pack being  
13 installed by pressing the battery pack against the at least one protruding member, thereby  
14 forcing the at least one protruding member against the bias of the at least one resilient  
15 spring member until the battery latch slides to a retracted position, allowing the battery  
16 pack to move past the at least one protruding members until the at least one protruding  
17 member is biased into the at least one recess of the battery pack when the battery pack is  
18 fully seated in the battery compartment of the housing.

1       18. The method of claim 17 further comprising the step of:  
2             (C) removing the battery pack from the battery compartment by sliding a slide  
3 button coupled to the battery latch until the at least one protruding member is in the  
4 retracted position and removing the battery pack from the battery compartment while  
5 holding the slide button in a position so that the battery latch is in the retracted position.

1 19. A method for assembling a battery latch and a slide button into a housing,  
2 (A) the battery latch comprising:  
3 (A1) a body portion;  
4 (A2) at least one resilient spring member integral to and extending from  
5 the body portion; and  
6 (A3) at least one protruding member integral to and extending from the  
7 body portion that extends at least partially into a battery compartment of a housing  
8 when the battery latch is installed in the housing, the at least one resilient spring  
9 member biasing the at least one protruding member into the battery compartment;  
10 (B) the slide button comprising:  
11 (B1) at least one retaining portion that is configured to be inserted into an  
12 opening in the battery latch;  
13 (C) the housing comprising:  
14 (C1) first and second rails in the interior of the housing;  
15 (C2) an end stop in the interior of the housing;  
16 (C3) a battery compartment defined by a recess in the housing;  
17 (C4) the battery latch being dimensioned to slide between the first and  
18 second rails, the battery latch including at least one resilient spring member  
19 integral to the battery latch, the at least one resilient spring member being placed  
20 against the end stop to provide a spring bias that causes the battery latch to slide to  
21 an extended position, the battery latch including at least one protruding member  
22 that extends at least partially into the battery compartment when the battery latch  
23 is in the extended position, the battery latch further including at least one opening;  
24 and  
25 (C5) an elongated slot, a portion of the elongated slot overlying the at least  
26 one opening of the battery latch;

(claim 19 continued)

27           (D) wherein the method comprises the steps of:  
28               (D1) sliding the body portion under the first and second rails;  
29               (D2) placing end portions of the resilient spring members against the end  
30              stop;  
31               (D3) placing the retaining portions of the slide button through the  
32              elongated slot in the housing and into the opening in the battery latch until the at  
33              least one retaining portion clicks to couple the slide button to the body portion  
34              through the elongated slot in the housing.

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